

We claim:

1. An adaptive quality control loop for a wireless communication employing a re-transmission scheme for error correction comprising the steps of:
  - 5 adjusting a first channel condition threshold associated with a first modulation and coding scheme (MCS) level used in a transmission of a first data packet in response to any error detection result associated with the transmission of the first data packet if the first data packet belongs to a first category; and
  - 10 adjusting the first channel condition threshold in response to a last error detection result associated with the transmission of the first data packet if the first data packet belongs to a second category.
2. The adaptive quality control loop of claim 1, wherein the first category includes data packets which are delay sensitive and the second category includes data packets which are delay insensitive.
3. The adaptive quality control loop of claim 1, wherein the last error detection result is either an error detection result that indicates a successful transmission of the first data packet or an error detection result for the last allowable re-transmission of the first data packet.
4. The adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted using a fixed step.
5. The adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted using a first variable step.
6. The adaptive quality control loop of claim 5, wherein the step of adjusting the first channel condition threshold comprises the step of:
  - 30 determining the first variable step using a desired MCS error rate for the first MCS level.
7. The adaptive quality control loop of claim 6, wherein the desired MCS error rate for the first MCS level is based on a block error rate target criterion.

8. The adaptive quality control loop of claim 6, wherein the desired MCS error rate for the first MCS level is based on a bit error rate target criterion.

5 9. The adaptive quality control loop of claim 5, wherein the step of adjusting the first channel condition threshold comprises the step of:  
determining the first variable step using a block or bit error rate target criterion and a first data rate associated with the first MCS level.

10 10. The adaptive quality control loop of claim 1 comprising the additional steps of:  
adjusting a second channel condition threshold associated with a second MCS level used in a transmission of a second data packet in response to any error detection result associated with the transmission of the second data packet if the second data packet belongs to the first category; and  
15 adjusting the second channel condition threshold in response to a last error detection result associated with the transmission of the second data packet if the second data packet belongs to the second category.

20 11. The adaptive quality control loop of claim 10, wherein the first channel condition is adjusted a first step based on an error detection result associated with the transmission of the first data packet, and the second channel condition is adjusted a second step based on an error detection result associated with the transmission of the second data packet.

25 12. The adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted such that the adjusted first channel condition threshold is less than a second channel condition threshold, the second channel condition threshold being a channel condition threshold adjacent to and greater than the first channel condition threshold.

30 13. The adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted such that the adjusted first channel condition threshold is greater than a second channel condition threshold, the second channel condition threshold being a channel condition threshold adjacent to and less than the first channel condition threshold.

14. The adaptive quality control loop of claim 1, wherein the first variable step is determined using an error detection result.

15. The adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted based on the last error detection result if the first data packet belongs to the second category.

16. The adaptive quality control loop of claim 15, wherein the first channel condition threshold is adjusted an up step if the last error detection result indicates a failed transmission of the first data packet.

17. The adaptive quality control loop of claim 15, wherein the first channel condition threshold is adjusted a down step if the last error detection result indicates a successful transmission of the first data packet.

18. The adaptive quality control loop of claim 1, wherein the first channel condition threshold is adjusted based on an average of all error detection results associated with any transmission of the first data packet if the first data packet belongs to the second category.

19. The adaptive quality control loop of claim 18, wherein the first channel condition is adjusted an up step if the average of all error detection results indicate that there were more failed than successful transmissions of the first data packet.

20. The adaptive quality control loop of claim 18, wherein the first channel condition is adjusted a down step if the average of all error detection results indicate that there were more successful than failed transmissions of the first data packet.